

# UNMANNED AERIAL VEHICLE (UAV)

## 308.1 PURPOSE AND SCOPE

The following procedures are intended to promote the safe, efficient and lawful operation of the Orange County Sheriff's Department (OCSD) Unmanned Aerial Vehicles (UAVs). Safety, above all else, is the primary concern in each and every operation, regardless of the nature of the mission.

## 308.2 DEFINITIONS

**After Action Report (AAR)** - The AAR is completed after each mission by the Pilot in Command (PIC) to identify areas where he/she performed well and areas he/she can improve upon.

**Master Maintenance Log** - A master maintenance log will be maintained by the Air Support Unit (ASU). The master maintenance log will be comprised of information derived from each UAV's maintenance spreadsheet.

**Maintenance Spreadsheet** - The maintenance spreadsheet will document all maintenance performed on a UAV. Each unit operating UAVs will maintain a maintenance spreadsheet for each UAV. Maintenance spreadsheets will be submitted to the UAV Chief Pilot on a quarterly basis.

**Mission Brief** - This form captures the nature of the UAV mission and provides the documentation necessary to track the use of UAVs.

**Person Manipulating the Controls** - A person other than the remote pilot in command (PIC) who is controlling the flight of a UAV under the supervision of the remote PIC.

**Remote Pilot in Command (Remote PIC or Remote Pilot)** - A person who holds a remote pilot certificate with a remote pilot rating and has the final authority and responsibility for the operation and safety of the UAV operation conducted under the Federal Aviation Administration (FAA) 14 Code of Federal Regulations (CFR) part 107. The PIC shall also meet the training requirements as detailed in the ASU Training Manual.

**SQUAWK** - An aviation form utilized to document maintenance deficiencies on an aircraft.

**Unmanned Aerial Vehicle Chief Pilot** - The UAV Chief Pilot is the designated ASU UAV Pilot in Command (PIC) that will conduct flight evaluations on OCSD UAV PICs to ensure standardization of UAV deployments and to check knowledge of FAA regulations.

**Unmanned Aerial Vehicle (UAV)** - A UAV (weighing more than .55 pounds and less than 55 pounds) including everything that is onboard or otherwise attached to the aircraft, which can be flown without the possibility of direct human intervention from within or on the aircraft.

**Visual Observer (VO)** - A person acting as a flight crew member who assists the UAV remote PIC and the person manipulating the controls to see and avoid other air traffic or objects aloft or on the ground.

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### **308.3 POLICY**

It shall be the mission of those personnel of the OCSD who are trained in the use of the UAV to use this resource to protect the lives and property of the people in Orange County and public safety personnel in full compliance with applicable laws and regulations, including but not limited to the State and Federal Constitutions and Federal Aviation Administration (FAA) regulations. UAVs shall not be used for missions that would violate the privacy rights of the public.

The use of a UAV can support public safety personnel in situations which would benefit from an aerial perspective and enable responders to detect dangers that could otherwise not be seen. The UAV can also be utilized for approved training missions.

### **308.4 PROTECTION OF RIGHTS AND PRIVACY CONCERNS**

The OCSD will consider the protection of individual civil rights and the reasonable expectation of privacy as a key component of any decision made to deploy the UAV. Each UAV PIC and VO will ensure that operations of the UAV are consistent with federal, state and local laws.

Absent a warrant or exigent circumstances, PICs and VOs shall adhere to FAA altitude regulations and shall not intentionally record or transmit images of any location where a person would have a reasonable expectation of privacy (e.g. inside residence, yard, enclosure).

PICs and VOs shall take reasonable precautions to avoid inadvertently recording or transmitting images of areas where there is a reasonable expectation of privacy. Reasonable precautions can include, for example, deactivating or turning imaging devices away from such areas or persons during UAV operations.

### **308.5 UAV MISSIONS**

The OCSD is committed to maintaining strong public support in the use of UAVs to better support the people in Orange County. OCSD will adhere to the Federal Aviation Administration (FAA) 14 Code of Federal Regulations (CFR) Part 107, to ensure UAVs are deployed under the most current federal rules. OCSD will operate under 14 CFR part 107 which are the same stringent regulations established for civilian commercial operators.

1. The authorized missions for the OCSD UAVs are:
  - (a) Post-incident crime scene preservation and documentation,
  - (b) Bomb Squad missions,
  - (c) Response to hazardous materials spills,
  - (d) Traffic Collision Investigations,
  - (e) Search and Rescue (SAR) missions as defined in the OCSD SAR Operations Manual,
  - (f) Public safety and life preservation missions to include barricaded suspects, hostage situations, active shooters, apprehension of armed and dangerous and/or violent suspects, and high-risk search warrants,

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- (g) Disaster response and recovery to include natural or human caused disasters including a full overview of a disaster area for post incident analysis and documentation,
- (h) Training flights in support of the OCSD UAV Training Manual,
- (i) In response to specific requests from local, state or federal fire authorities for fire response and prevention,
- (j) When there is probable cause to believe that (1) the UAV may record images of a place, thing, condition, or event; and (2) that those images would be relevant in proving that a certain felony had occurred or is occurring, or that a particular person committed or is committing a certain felony and use of the UAV does not infringe upon the reasonable expectation of privacy,
- (k) Pursuant to a search warrant,
- (l) Inspection of Orange County property and facilities.

### **308.6 UAV OPERATIONS**

This policy is intended to provide personnel who are assigned to the OCSD UAV program with the responsibilities associated with the deployment of UAVs. The OCSD Aviation Support Unit (ASU) will manage the UAV program and will manage the program to ensure safe, effective UAV deployments within OCSD policies and procedures.

This policy is to be followed with regard to general operations, information gathered, and law enforcement purposes. OCSD will operate UAVs in a manner which observes Constitutional rights and is in accordance with local, state and federal law.

The OCSD will provide qualified UAV pilots under 14 CFR Part 107 who can deploy UAVs consistent with Part 107 in a safe and efficient manner while in the performance of their official duties.

#### **308.6.1 INFORMATION DISTRIBUTION**

The OCSD UAV policy and procedures will disseminate from the following source(s): The Sheriff, Undersheriff, Assistant Sheriff of Operations, and Commander of Field Operations. OCSD UAV personnel are responsible for ensuring they are informed about the specifications that apply to his/her duties and responsibilities. ASU will ensure the following material, in current form, is available:

1. 14 CFR Part 43, 61, 91, and 107
2. UAV equipment manuals, owner's manuals, and flight handbooks for each type of UAV to be used.

#### **308.6.2 POLICY DISTRIBUTION**

A hard copy of this policy will be placed in the ASU Policy and Procedures binder located in the Ready Room. This policy is also available on Lexipol, and viewable through the Sheriff's Intranet with future revisions for all Department personnel to review.

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### **308.6.3 UAV OPERATOR'S MANUAL AND FARs**

All limitations and regulatory information with respect to the specific UAV and Federal Aviation Regulations (FARs) pertaining to the use of UAVs shall be strictly followed.

### **308.6.4 CODE OF FEDERAL REGULATION LIBRARY**

The ASU will maintain a current library of UAV manuals, policy and procedures manuals, notices, and applicable FARs.

### **308.7 UAV PROCURMENT**

The Technology Management Program was adopted to create a uniform process for identifying, reviewing, vetting, planning and approving technology for OCSD. Prior to the purchase of a UAV, a request shall be submitted to the OCSD Technology Panel for review and approval. Upon the approval of the Technology Panel and Executive Command, a unit may operate their own UAV.

1. A unit seeking to purchase and operate a UAV may consult with the ASU prior to submitting a request to determine if their operational needs could be satisfied by the ASU.

### **308.8 UAV DEPLOYMENT**

#### **308.8.1 UNMANNED AIRCRAFT SYSTEMS INSURANCE APPLICATION**

The PIC shall ensure both the PIC and UAV are insured. All County Aviation Insurance is coordinated through the ASU Administrative Sergeant.

#### **308.8.2 MISSION APPROVAL**

Prior to deployment, the PIC shall ensure the UAV mission has been approved by the unit supervisor.

#### **308.8.3 PRE-FLIGHT INSPECTION**

1. The PIC will inspect each UAV to be used prior to each flight. If the UAV is found to not be in flight worthy condition, the reason will be documented in the UAV log book and the UAV will be taken out of service until the discrepancy can be remedied. The UAV log book shall be maintained by the unit that owns the UAV.
2. The preflight inspection will include, but not be limited to, general overview of the UAV and supporting electronic equipment, battery condition and life, motors, mounts and propellers, cameras and data cards.

#### **308.8.4 MISSION BRIEF**

1. Prior to, or as soon as practicable after deploying the UAV on a mission, the PIC and VO will file the OCSD Mission Brief by emailing the form to the OCSD UAV email address. The ASU will maintain the mission briefs for audits and inspections of the UAV program.
2. Due to the nature of most UAV missions, the actual flight time will be somewhat short. It is critical the crew utilizes good Crew Resource Management (CRM) to maximize the time on the mission.

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3. After the mission has been completed, the crew will conduct an After Action Report (AAR) to identify areas where they performed well and areas they can improve upon and email the OCSD AAR Form to the OCSD UAV email address. The AARs will be retained in accordance with OCSD's Records Retention and Disposition Schedule.

#### 308.8.5 WAIVER REVIEW

1. Before a UAV mission, the PIC will ensure a waiver has been filed, if required, and approved by the FAA prior to conducting the mission.
2. If an emergency waiver is needed, the PIC will notify the FAA via telephone and gain appropriate written approval prior to conducting the mission. The written approval shall be forwarded to ASU at the earliest opportunity.

#### 308.8.6 PILOT IN COMMAND / VISUAL OBSERVER

1. The PIC will be responsible for ensuring the UAV flight is conducted safely and efficiently.
2. The PIC will ensure the UAV and all mission equipment are ready and operational for the mission to be conducted.
3. The Visual Observer (VO) will be used as an aid to the PIC, during all aspects of the mission.
4. The VO will make sure the information is relayed to the PIC with regards to collision avoidance with other objects and dangerous conditions.
5. The VO will assist the PIC in capturing video and data to be collected during the mission so it frees up the PIC to fly the UAV.

#### 308.8.7 RECORDING / DATA

1. The PIC will ensure a new, unused data card is used to record each mission.
2. Once the mission is complete, the PIC or case agent will book the data card into the OC Crime Lab Photolab. The data card will not be manipulated, copied or downloaded onto any device prior to booking the data card into Sheriff's Evidence. Photographs and/or video of individual missions will be requested through the Orange County Crime Lab.
3. Subpoenas, California Public Records Act (CPRA) and requests for discovery will be filtered through the ASU and disseminated to the appropriate unit.

See **OCSD Policy 303 - Department Media** for additional information regarding Department recordings.

#### 308.8.8 POST FLIGHT INSPECTION

The PIC will ensure after the mission is complete, the UAV has no damage and the equipment has been properly shut down and stored away.

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#### 308.8.9 SHIFT LOG

The OCSD UAV Chief Pilot will enter the UAV deployment into the ASU Shift Log after receiving both the Mission Brief and the After Action Form.

#### 308.8.10 UAV ACCIDENT

If an accident occurs during the operation of the UAV and results in serious injury to any person, any loss of consciousness, or if it causes damage to any property (other than UAV) in excess of \$500.00 to repair or replace the property, notification shall be made to the Flight Standards District Office within ten days per FAA guidelines. Notification shall be immediately made to the ASU for investigation of the accident. Damage to an OCSD UAV will be documented on a Damage to County Property form.

### **308.9 UAV MAINTENANCE**

#### 308.9.1 MAINTENANCE PROCEDURES

1. Maintenance on OCSD UAVs is to be performed in house, by UAV maintenance personnel designated by the ASU.
2. If maintenance cannot be performed in house, it is to be sent to the Original Equipment Manufacturer (OEM) or an approved service center.
3. All UAV maintenance is to comply with manufacturer specifications, FAA Advisory Circular 43, and best practices set forth by the FAA.

#### 308.9.2 MAINTENANCE DOCUMENTATION

1. UAV maintenance documentation is to be done utilizing the ASU Maintenance Log as a way to keep accurate tracking of OCSD UAVs. The ASU log will keep records on flights, maintenance cycles, and the status of repair parts.
2. All maintenance conducted on OCSD UAVs will be documented on the UAV Maintenance Spreadsheet.

#### 308.9.3 BATTERY CARE / INSPECTION

1. Batteries are to be inspected before each flight, and at the end of each flight.
2. If a battery is found to have bulging or excessive heat it is to be placed in a fire proof container until it can be disposed of properly.
3. Batteries are to be inventoried and inspected by UAV PICs once a month, and if a battery is found to have lost charging ability, is damaged, or presents a fire danger, it is to be removed from service and placed into a fire proof container until it can be disposed of properly.

#### 308.9.4 MAINTENANCE DISCREPANCIES

1. When a maintenance discrepancy is discovered, it is the responsibility of the PIC to ensure that discrepancy is noted on the maintenance request for service on a "SQUAWK" form located in the log book for the UAV. The UAV's log book shall be retained in accordance with OCSD's Records Retention and Disposition Schedule.

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2. Once a discrepancy has been noted in the UAV log book, the PIC will also need to log it into the digital ASU Maintenance Log located on the Sheriff's Network.
3. If the discrepancy will affect the safety of flight, the UAV is to be grounded until the maintenance discrepancy can be remedied.
4. If the discrepancy does not affect safety of flight and can be deferred, the UAV Chief Pilot shall be notified.
5. If a UAV is grounded and not considered safe for flight (Red X), a red tag will be attached to the UAV controller with the date which it was grounded, noting the mechanical problem with the signature of the person who grounded the UAV.
6. Maintenance records will be maintained by the ASU in accordance with OCSD's Records Retention and Disposition Schedule.

#### **308.10 ONGOING POLICY MANAGEMENT**

After action reviews should be generated to include the number of UAV operational deployments (not including training flights) conducted and a brief description of the missions flown along with the number of each type of mission. OCSD will continue to engage in meaningful review of UAV as the technology advances.